

IN THE CLAIMS:

Please cancel Claims 4 to 6 without prejudice to or disclaimer of the subject matter presented therein. Please amend Claims 1, 3, 7, 11, and 16 as shown below.

1. (Currently Amended) A radiation image pick-up apparatus comprising:
conversion means for converting radiation into an electrical signal;
accumulation means for performing an accumulation operation
of accumulating the electrical signal converted by said conversion means;
read means for reading out the electrical signal accumulated in said
accumulation means;
detection means for detecting start and end of irradiation of the radiation;
a driving circuit for ~~accumulating the electrical signal in said accumulation~~
~~means~~ driving said accumulation means to perform the accumulation operation responsive
to a detection of the start of irradiation of the radiation by said detection means, and for
driving said read means responsive to a detection of the end of irradiation ~~of the radiation~~
~~is detected, based on a detection result of~~ by said detection means; and
control means for controlling said driving circuit,
wherein said control means performs an idling operation of said conversion
means before the accumulation operation, with the idling operation continuing until the
start of irradiation of the radiation is detected by the detection means, and
wherein an operation time Ta of the idling operation and a time Tr for
driving said read means in order to read out image information satisfy $Tr \geq Ta$.

2. (Original) An apparatus according to claim 1, wherein said control means stops driving said read means by said driving circuit or an external input when read of the electrical signal by said read means ends.

3. (Currently Amended) An apparatus according to claim 1, wherein said control means is an IC chip circuit.

4. to 6. (Cancelled)

7. (Currently Amended) An apparatus according to claim 1, further comprising:

an analog/digital converter for converting into a digital signal ~~an~~ the electrical signal read out by the read means ~~operation and idling operation~~; and

a memory for storing electrical signals converted by said analog/digital converter.

8. (Original) An apparatus according to claim 7, wherein said memory includes one of a hard disk, a magneto-optical disk, and a random access memory.

9. (Original) An apparatus according to claim 8, wherein said memory is loadable/unloadable into/from a main body of the radiation image pick-up apparatus.

10. (Original) An apparatus according to claim 1, further comprising a loadable/unloadable battery for driving a main body of the radiation image pick-up apparatus.

11. (Currently Amended) An apparatus according to claim 1, wherein said conversion means comprises:

a wavelength converter for converting the radiation into light; and
photoelectric conversion means for converting the light converted by said wavelength converter into an electrical signal.

12. (Original) An apparatus according to claim 1, wherein said conversion means contains one material selected from the group consisting of lead iodide, mercurous iodide, selenium, cadmium telluride, gallium arsenide, gallium phosphide, zinc sulfide, and silicon for directly converting the radiation into an electric charge.

13. (Original) An apparatus according to claim 1, wherein said conversion means and said read means contain amorphous silicon and are formed by the same step.

14. (Original) An apparatus according to claim 11, wherein said wavelength converter is disposed at a position in tight contact with said photoelectric conversion means.

15. (Original) An apparatus according to claim 11, wherein said wavelength converter contains one material selected from the group consisting of $\text{Gd}_2\text{O}_2\text{S}$, Gd_2O_3 , and CsI as a major component.

16. (Currently Amended) A method of driving a radiation image pick-up apparatus for obtaining image information by converting radiation which irradiates an object to be examined into an electrical signal by a conversion element for converting the radiation into an electrical signal, comprising steps of:

an accumulation operation of detecting start of irradiation of the radiation and accumulating the converted electrical signal;

a read operation of detecting end of irradiation of the radiation and reading out the accumulated electrical signal; and

an idling operation of performing idle read of the conversion element before the accumulation operation,

wherein the idling operation continues until the start of irradiation of the radiation is detected, and

wherein an operation time T_a of the idling operation and an operation time T_r of the read operation satisfy $T_r \geq T_a$.

17. (Original) A method according to claim 16, further comprising a step of an operation of adding frame data in the idling operation immediately before the accumulation operation and frame data in the read operation, and a step of outputting a sum as an image.

18. (Original) A radiation image pick-up system comprising:
a radiation image pick-up apparatus defined in claim 1; and
a radiation source for emitting radiation to said radiation image pick-up
apparatus.